Claims

1. A method for feeding a treating agent onto a moving surface (200), using a feed apparatus (10) which comprises at least one feed chamber (12), which is provided with at least one inlet opening (13a) and with at least one outlet opening (13b), and at least one nozzle plate (18) which is provided with holes (19) and which communicates with the at least one outlet opening (13b) of said at least one feed chamber (12), the treating agent being passed from said at least one outlet opening (13b) of said at least one feed chamber (12) through the holes (19) of said at least one nozzle plate (18) out, **characterized** in that a downwards moving first treating agent flow (F1) is formed out of the jets discharging from the holes (19) of said at least one nozzle plate (18), and that an evening-out apparatus (100) placed underneath the feed apparatus (10) is additionally used in the method, which evening-out apparatus has at least one inclined surface (110, 120, 130) which receives the first treating agent flow (F1) and which forms a downwards sloping flow path (L1, L2), on which an even laminar second treating agent flow (F2) is formed out of the first treating agent flow (F1), which second treating agent flow is passed from the evening-out apparatus (100) onto said moving surface (200).

2. A method as claimed in claim 1, **characterized** in that the first treating agent flow (F1) falls from the holes (19) of said nozzle plate (18) freely in the air as a curtain onto the inclined surface (110, 120, 130) of the evening-out apparatus (100) situated underneath, which inclined surface receives the first treating agent flow (F1).

3. A method as claimed in claim 1, **characterized** in that the first treating agent flow (F1) passes directly from the holes (19) of said nozzle plate (18) onto the inclined surface (110, 120, 130) of the evening-out apparatus (100) situated underneath, which inclined surface receives the first treating agent flow (F1).

4. A method as claimed in any one of claims 1 to 3, **characterized** in that the second treating agent flow (F2) formed into an even laminar flow by means of the evening-out apparatus (100) is transferred from the evening-out apparatus (100) as a curtain freely falling in the air onto the moving surface (200).

5. A method as claimed in any one of claims 1 to 3, **characterized** in that the second treating agent flow (F2) formed into an even laminar flow by means of the evening-out apparatus (100) is transferred from the evening-out apparatus (100) at a point of contact between one surface (110, 130, 140) of the evening-out apparatus (100) and the moving surface (200) onto the moving surface (200).

6. A method as claimed in any one of claims 1 to 5, **characterized** in that the downwards sloping flow path (L1, L2) formed on at least one inclined surface (110, 120, 130, 140) of the evening-out apparatus (100) is directed in the direction of movement (S) of the moving surface (200), whereby a gap (G) narrowing in the direction of movement (S) of the moving surface (200) is formed between the evening-out apparatus (100) and the moving surface (200).

7. A method as claimed in any one of claims 1 to 5, **characterized** in that the downwards sloping flow path (L1, L2) formed on at least one inclined surface (110, 120, 130, 140) of the evening-out apparatus (100) is directed against the direction of movement (S) of the moving surface (200).

8. An apparatus for feeding a treating agent onto a moving surface (200), which apparatus includes a feed apparatus (10) which comprises at least one feed chamber (12), which is provided with at least one inlet opening (13a) for the treating agent and with at least one outlet opening (13b) for the treating agent, and at least one nozzle plate (18) which is provided with holes (19) and which communicates with said at least one outlet opening (13b) of said at least one feed chamber (12), the treating agent flow moving from said at least one outlet opening (13b) of said at least one feed chamber (12) through the holes (19) of said at least

one nozzle plate (18) out, **characterized** in that the jets discharging from the holes (19) of said at least one nozzle plate (18) form a downwards moving first treating agent flow (F1), and that the apparatus additionally comprises an evening-out apparatus (100) which is placed underneath the feed apparatus (10) and which has at least one inclined surface (110, 120, 130, 140) which receives the first treating agent flow (F1) and which forms a downwards sloping flow path (L1, L2), on which the first treating agent flow (F1) is formed into an even laminar second treating agent flow (F2), which is passed from the evening-out apparatus (100) onto said moving surface (200).

9. An apparatus as claimed in claim 8, **characterized** in that the inclined surface (110, 120) of the evening-out apparatus (100) receiving the first treating agent flow (F1) is spaced from the holes (19) of the nozzle plate (18) of the feed apparatus (10), whereby the first treating agent flow (F1) discharging from the holes (19) of the nozzle plate (18) falls freely in the air as a curtain onto the inclined surface (110, 120) of the evening-out apparatus (100) situated underneath, which inclined surface receives the first treating agent flow (F1).

10. An apparatus as claimed in claim 8, **characterized** in that the first inclined surface (110, 120) of the evening-out apparatus (100) is directly underneath the holes (19) of the nozzle plate (18) of the feed apparatus (10), whereby the first treating agent flow (F1) discharging from the holes (19) of the nozzle plate (18) passes from the holes (19) of the nozzle plate (18) directly onto the inclined surface (110, 120) of the evening-out apparatus (100) situated underneath, which inclined surface receives the first treating agent flow (F1).

11. An apparatus as claimed in any one of claims 8 to 10, **characterized** in that the inclined surface (110, 130) of the evening-out apparatus (100) passing the second treating agent flow (F2) onto the moving surface (200) is spaced from the moving surface (200), whereby the second treating agent flow (F2) falls freely in the air as a curtain onto the moving surface (200).

12. A method as claimed in any one of claims 8 to 10, **characterized** in that the surface (130, 140) of the evening-out apparatus (100) passing the second treating agent flow (F2) onto the moving surface (200) is in contact with the moving surface (200), whereby the second treating agent flow (F2) is transferred onto the moving surface (200) directly at a point of contact between said surface (130, 140) of the evening-out apparatus (100) and the moving surface (200).

13. An apparatus as claimed in any one of claims 8 to 12, **characterized** in that the downwards sloping flow path (L1, L2) of the evening-out apparatus (100) is directed in the direction of movement (S) of the moving surface (200), whereby a gap (G) narrowing in the direction of movement (S) of the moving surface (200) is formed between the evening-out apparatus (100) and the moving surface (200).

14. An apparatus as claimed in any one of claims 8 to 12, **characterized** in that the downwards sloping flow path (L1, L2) of the evening-out apparatus (100) is directed against the direction of movement (S) of the moving surface (200).

15. An apparatus as claimed in claim 8, **characterized** in that the evening-out apparatus (100) comprises one inclined surface (110) which is provided with a trailing edge (111) and which receives the first treating agent flow (F1) falling freely in the air as a curtain from the holes (19) of the nozzle plate (18) and passes the second treating agent flow (F2), which has become an even laminar treating agent flow on the flow path (L1) of the inclined surface (110), from its trailing edge (111) onto the moving surface (200) as a curtain falling freely in the air.

16. An apparatus as claimed in claim 8, **characterized** in that the evening-out apparatus (100) comprises two inclined surfaces (120, 130) provided with a trailing edge (121, 131) such that the trailing edge (121) of the first inclined surface (120) rests on the second inclined surface (130), the first inclined surface (120) receiving the first treating agent flow (F1) falling freely in the air as a

curtain from the holes (19) of the nozzle plate (18) and the second inclined surface passing the second treating agent flow (F2), which has become an even laminar treating agent flow on the flow path (L1, L2) of said inclined surfaces (120, 130), from its trailing edge (131) onto the moving surface (200) as a curtain falling freely in the air.

17. An apparatus as claimed in claim 8, **characterized** in that the evening-out apparatus (100) comprises two inclined surfaces (120, 130) provided with a trailing edge (121, 131) such that the trailing edge (121) of the first inclined surface (120) rests on the second inclined surface (130) and the trailing edge (131) of the second inclined surface (130) rests against the moving surface (200), the first inclined surface (120) receiving the first treating agent flow (F1) falling freely in the air as a curtain from the holes (19) of the nozzle plate (18) and the second inclined surface passing the second treating agent flow (F2), which has become an even laminar treating agent flow on the flow path (L1, L2) of said inclined surfaces (120, 130), from its trailing edge (131) directly onto the moving surface (200).

18. An apparatus as claimed in claim 8, **characterized** in that the evening-out apparatus (100) comprises one inclined surface (110) provided with a trailing edge (111) and one rotating cylindrical surface (140) such that the trailing edge (111) of the first inclined surface (110) rests against the rotating cylindrical surface (140) and the rotating cylindrical surface (140) is in contact with the moving surface (200), the first inclined surface (110) receiving the first treating agent flow (F1) falling freely in the air as a curtain from the holes (19) of the nozzle plate (18) and the rotating circular surface (140) passing the second treating agent flow (F2), which has become an even laminar treating agent flow on the flow path (L1, L2) of said surfaces (120, 130), onto the moving surface (200) at a point of contact between the rotating cylindrical surface (140) and the moving surface (200).

19. An apparatus as claimed in claim 16, **characterized** in that the length (B1) of the second inclined surface (130) is at least 1.5 times greater than the width (B1) of the moving surface (200) and that actuating members (310, 320) are arranged on both sides of the moving surface (200), which actuating members are connected to the second inclined surface (130) and by which the second inclined surface (130) is arranged to be movable in a direction (T) transverse to the direction of movement (S) of the moving surface (200), whereby that portion of the second inclined plate (130) which is at the side of the moving surface (200) at each particular time can be cleaned manually or automatically.

20. An apparatus as claimed in claim 16 or 19, **characterized** in that the evening-out apparatus (100) comprises a closed space (50) formed between the first (120) and the second (130) inclined surface and a vacuum apparatus (40) associated with said space, and that the second inclined surface (130) comprises holes (133) from which an air cushion carried by the moving surface (200) with it can be sucked into the closed space (50) by means of the vacuum apparatus (40).